

Name _____

Date _____

202—Review

Justify the following statements with postulates, properties, definitions, or theorems.

1. _____ $m\angle B = m\angle B$
2. _____ If $RS = TW$, then $TW = RS$.
3. _____ If $m\angle 1 + m\angle 2 = 100$ and $m\angle 2 = 75$, then $m\angle 1 + 75 = 100$.
4. _____ If $m\angle 1 + 75 = 100$, then $m\angle 1 = 25$.
5. _____ If S is between R and T, then $RT = RS + ST$.
6. _____ If X is the midpoint of \overline{UV} , then $UX = XV$.
7. _____ If $MN = NO$ and $NO = OP$, then $MN = OP$.
8. _____ If $m\angle 1 + m\angle 2 + m\angle 3 = 180$ and $m\angle 3 = 70$,
then $m\angle 1 + m\angle 2 + 70 = 180$.
9. _____ If $\angle 4 \cong \angle 8$ and $\angle 8 \cong \angle 10$, then $\angle 4 \cong \angle 10$.
10. _____ $\overline{AB} \cong \overline{AB}$
11. _____ If the $m\angle 5 = m\angle 6$ and $m\angle 5 + m\angle 6 = 180$,
then $m\angle 5 + m\angle 5 = 180$.
12. _____ If $m\angle 5 + m\angle 5 = 180$, then $2m\angle 5 = 180$.
13. _____ If $2m\angle 5 = 180$, then $m\angle 5 = 90$.
14. _____ If K is the midpoint of \overline{JL} , then $\overline{JK} \cong \overline{KL}$.
15. _____ If $m\angle 1 = m\angle 3$ and $m\angle 3 = 48$, then $m\angle 1 = 48$.
16. _____ $\angle RST \cong \angle RST$
17. _____ If $3(x - 8) = 39$, then $3x - 24 = 39$.
18. _____ If $m\angle A = m\angle B$ and $m\angle C = m\angle D$,
then $m\angle A + m\angle C = m\angle B + m\angle D$.
19. _____ If $3x - 24 = 39$, then $3x = 63$.
20. _____ If $3x = 63$, then $x = 21$.
21. _____ If P is in the interior of $\angle LMN$,
then $m\angle LMP + m\angle PMN = m\angle LMN$
22. _____ If $\frac{1}{2}x = 10$, then $x = 20$.

Possible Reasons:
Addition,
Subtraction,
Multiplication,
Distributive,
Reflexive,
Symmetric,
Transitive,
Substitution,
Division,
Def. of midpoint,
Def. of \angle bisector,
Segment + Postulate,
Angle + Postulate

23. _____ If $6(x + 1) = 24$, then $6x + 6 = 24$.

24. _____ If $EF = GH$ and $AB = CD$, then $AB - EF = CD - GH$.

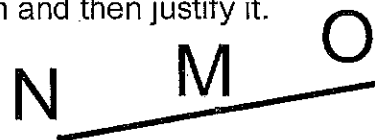
25. _____ If $m\angle X = m\angle Y$, then $m\angle Y = m\angle X$.

Write a conclusion based on the given and the diagram and then justify it.

26. Given: M is the midpoint of \overline{NO} .

Conclusion: _____

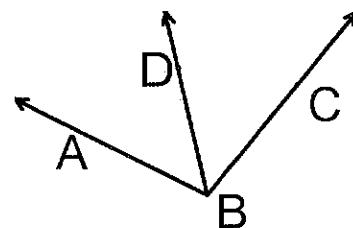
Reason: _____



27. Given: \overrightarrow{BD} bisects $\angle ABC$

Conclusion: _____

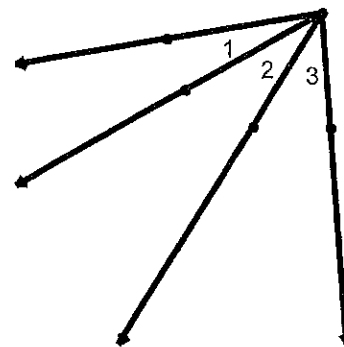
Reason: _____



28. Given: $\angle 1 \cong \angle 2$; $\angle 2 \cong \angle 3$

Conclusion: _____

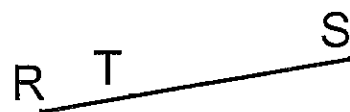
Reason: _____



29. Given: Diagram

Conclusion: $RS = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

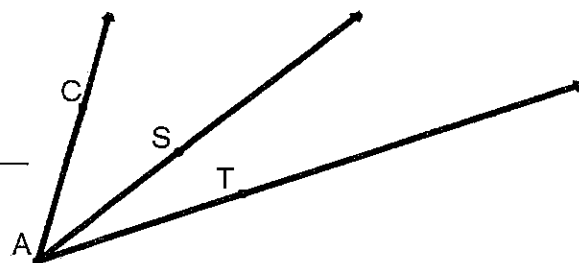
Reason: _____



30. Given: Diagram

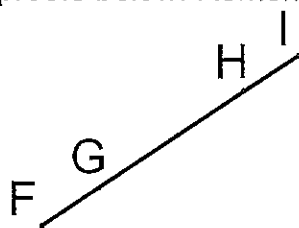
Conclusion: $m\angle CAT = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

Reason: _____

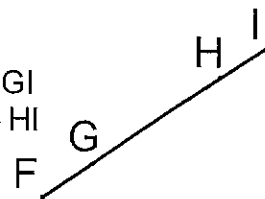


Write out the following proofs below. Remember to mark the diagrams.

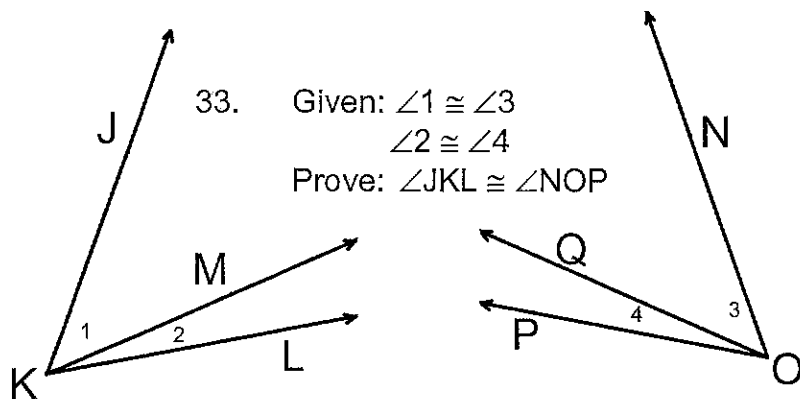
31. Given: $FG = HI$
 Prove: $FH = GI$



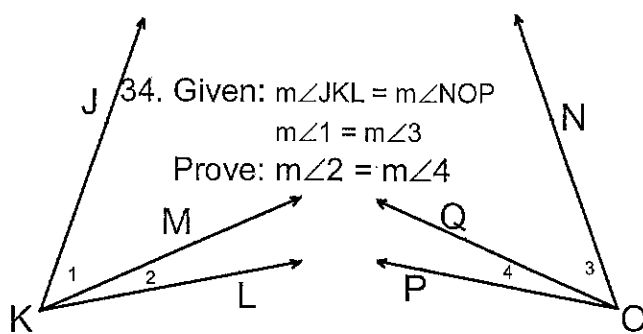
32. Given: $FH = GI$
 Prove: $FG = HI$



33. Given: $\angle 1 \cong \angle 3$
 $\angle 2 \cong \angle 4$
 Prove: $\angle JKL \cong \angle NOP$



34. Given: $m\angle JKL = m\angle NOP$
 $m\angle 1 = m\angle 3$
 Prove: $m\angle 2 = m\angle 4$



2-7

Skills Practice

Proving Segment Relationships

Justify each statement with a property of equality, a property of congruence, or a postulate.

- $QA = QA$
- If $\overline{AB} \cong \overline{BC}$ and $\overline{BC} \cong \overline{CE}$, then $\overline{AB} \cong \overline{CE}$.
- If Q is between P and R , then $PR = PQ + QR$.
- If $AB + BC = EF + FG$ and $AB + BC = AC$, then $EF + FG = AC$.

Complete each proof.

5. Given: $\overline{SU} \cong \overline{LR}$
 $\overline{TU} \cong \overline{LN}$

Prove: $\overline{ST} \cong \overline{NR}$

Proof:



Statements

a. $\overline{SU} \cong \overline{LR}, \overline{TU} \cong \overline{LN}$

b. _____

c. $SU = ST + TU$

$LR = LN + NR$

d. $ST + TU = LN + NR$

e. $ST + LN = LN + NR$

f. $ST + LN - LN = LN + NR - LN$

g. _____

h. $\overline{ST} \cong \overline{NR}$

Reasons

a. _____

b. Definition of \cong segments

c. _____

d. _____

e. _____

f. _____

g. Substitution Property

h. _____

6. Given: $\overline{AB} \cong \overline{CD}$

Prove: $\overline{CD} \cong \overline{AB}$

Proof:

Statements

a. _____

b. $AB = CD$

c. $CD = AB$

d. _____

Reasons

a. Given

b. _____

c. _____

d. Definition of \cong segments